

**Notice of Allowability**

Application No.

10/735,142

Examiner

Michael A. Lyons

Applicant(s)

MCALEXANDER, WILLIAM I.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Original filing of 11 December 2003.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 052305
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Gregory J. Tooley, Jr.  
Supervisory Patent Examiner

## **DETAILED ACTION**

### ***Allowable Subject Matter***

**Claims 1-27 are allowed in view of the prior art.**

The following is an examiner's statement of reasons for allowance:

As to claims 1 and 16, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical spectrum analyzer and corresponding spectral phase measurement method, the analyzer comprising a receiver generating three or more phase-diverse mixed signals that are a function of an optical local oscillator signal and an unknown signal, a phase quadrature generator generating a first and second phase quadrature signals as a function of the output phase-diverse signals, and a complex signal generator to generate a complex signal as a function of the first and second phase quadrature signals, the signal having a negative and positive image component (claim 16), in combination with the rest of the limitations of the above claim.

As to claim 12, the prior art of record, taken either alone or in combination, fails to disclose or render obvious an optical spectrum analyzer, the analyzer comprising an optical detector comprising a plurality of photo detectors, each photo detector being coupled to an output from an optical coupler receiving a local oscillator signal and an unknown signal, along with a first subtraction unit coupled to the optical detector, a transformation unit coupled to the subtraction unit, and a complex signal generation unit coupled to the transformation unit for signal processing, in combination with the rest of the limitations of the above claims.

With further regard to the claims, the prior art of record, such as US Pat. 5,365,185, discloses a spectrum analyzer with a coupler coupling a local oscillator with a unknown signal

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for spectrum analysis, and a signal analysis unit that generates phase quadrature signals as a function of the combined output, but fails to disclose the complex signal generation that is a function of the phase quadrature signals, in combination with the rest of the limitations of the above claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat. 5,115,332 to Naito et al., USPGPUB 2005/0068533 to Gurunathan et al., and "Phase- and Polarization-Diversity Coherent Optical Techniques" by Kazovsky.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday through Friday.

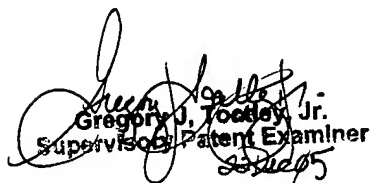
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL

December 21, 2005

  
Gregory J. Tooley, Jr.  
Supervisor, Patent Examiner